MANAGING PLANET EARTH: ESSAY; Adoring Nature, Till It Bites Us In the Back

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Body

Not far from Washington is a voluptuously landscaped public park called Brookside Gardens, 50 acres of tumbling giant feather grass, creeping St. John's wort, Brazilian verbena, rose mallows, hibiscus trees, Madagascar periwinkles, crape myrtle, purple plum trees, lemon-scented gum trees, Amazon water lilies and welcoming lotuses.

Butterflies as big as fists and hummingbirds the size of thumbs dart through the controlled extravagance, but food is forbidden in the gardens, so you won't be pestered by platoons of ants, flies or yellow jackets, and there is scant standing water in which nature's wretched little phlebotomists can breed.

A placard at the park in Wheaton, Md., gives a bit of history: before there were the gardens, there was nothing but "flat, swampy and wooded land," a wetland. And though I know that wetlands are great and necessary habitats, I must shamefacedly admit that, if given a choice between a stroll at Brookside Gardens and a tramp through serious, forested, wetlanded wilderness, I'd take the manicured semi-nature most every time.

In short, I'm a practitioner of what may be called a soft-core biophilia.

Biophilia is the term coined by the Harvard naturalist Dr. Edward O. Wilson to describe what he saw as humanity's "innate tendency to focus on life and lifelike processes," and to be drawn toward nature, to feel an affinity for it, a love, a craving. Who has not experienced the thrill of biophilia? You see a fine, fat maple tree ablaze with the sugared tannins of autumn, or the sun glittering on the Hudson River in an explosion of diamonds and for a moment you wish you were Julie Andrews: the hills are alive!

But then you stumble through a bush and emerge covered with ticks. Or you watch a bunch of Hitchcockian crows maul and kill a baby squirrel. You try to tell yourself, c'est la guerre, there are too many squirrels anyway, but in fact you resent this chronic mouthiness of nature, these endless rounds of attack and snack, and you're grateful anew for four walls and DEET. Nature is a mother in so many ways, and that means you adore her and depend on her but at times she's pure Medea.

And all of these messy, contradictory feelings are natural. In the two decades since Dr. Wilson published "Biophilia," many other researchers have explored the meaning of nature-lust, and its components, and the extent to which we are possessed by it. They have found evidence of biophilia everywhere. Americans are said to be sports nuts, for example, yet more people in this country attend zoos every year than they do all professional sporting events combined. Of the many luxuries that money can buy, the most coveted has long been a pristine view: lakeside, seaside, mountainside, Central Park.

"People don't realize that New York has a larger proportion of its real estate in open spaces than any other major city," said Dr. Stephen R. Kellert, a professor of social ecology at Yale and a leading figure in the biophilia field.

Yet biophilia researchers also recognize that biophilia enfolds biophobia, a fear of being sucked down and overwhelmed by too much nature. Guns, cars, bombs and electric wires can be deadly, but when moviemakers want to really horrify an audience, nothing works like a giant tarantula on James Bond's shoulder, or a pit of writhing snakes beneath the feet of Indiana Jones.

"By the biophilia hypothesis, nature affects us negatively as well as positively," said Dr. Peter Verbeek, a professor of psychology at Miyazaki International College in Japan. "One thing it doesn't do is leave us cold."

Moreover, even as humans are drawn toward nature, researchers say, they also are prime among primates, a group known for its dexterity and artisanship, in exploiting nature for its own ends. Chimpanzees may be pretty good at making tools to catch termites and crack nuts, but humans are really good at making tools to catch and crack anything at all.

"The idea of mastery over nature is very primate," said Dr. Verbeek. "It's a danger to our species. If chimps had the same-sized brains that we do, they might be paving over their habitat, too."

All of which suggests that merely having an affinity for the natural world in no way guarantees that one will work to protect it in its astonishing but not always amiable diversity, from the glamour queens like humpback whales and orangutans to the bloodsuckers, the crawlers, the parasites, the crows.

"The best argument for treating the environment well is probably the selfish one," admitted Dr. Frans de Waal, a primatologist at Emory University in Atlanta, "the reminder that if we don't treat nature well it will come back and bite us."

Nevertheless, researchers say appeals to biophilia offer a personal, expressive and optimistic spin to the environmental cause, a warmblooded auxiliary to abstract debates over climate change and debt-for-nature swaps. The love of nature, they say, like the love of music, is a universal, and even those who will never be professional musicians can be taught to carry a tune.

"It's unreasonable to expect that everybody will care as much about hard-core nature as do those of us who work in the field," said Dr. Karen B. Strier, a professor of anthropology at University of Wisconsin who has studied woolly spider monkeys in Brazil for the last 20 years. "But if people can be convinced to think twice before buying something made of endangered tropical hardwood, or ordering a fish that's being overfished, well, that can make a real difference. A little bit of biophilia goes a long way."

So, too, does a little bit of nature. Dr. Frances E. Kuo and her colleagues in the departments of natural resources and environmental sciences at the University of Illinois recently have shown that, for people living in low-income housing projects in Chicago, those randomly assigned to apartments that overlook a small bit of nature -- nothing more than two mature trees and a patch of grass -- reported feeling significantly healthier, more productive, less aggressive and friendlier than did their neighbors with views of alleys and concrete, and they performed better on tests of cognitive function.

"A small amount of greenery can make an amazingly large difference," Dr. Kuo said.

That humans are innately fascinated by nature can be seen in the earliest artifacts of human culture: bird figurines carved in ivory 22,000 years ago; the lovingly rendered bulls, stags and horses on the cave paintings of Lascaux.

Nature peoples a vast majority of religions throughout history: gods of the sun, soil, sea and sky; jaguar gods, elephant gods, eagle gods, coyote gods. Even in monotheistic religions, the greatest struggles pit humans against nature: Adam and Eve confront the serpent; Moses condemns the golden calf; Noah survives a 40-day deluge; Jesus, a 40-day drought. The very phrase "human nature" suggests that, no matter Katharine Hepburn's famous line about how we're put on earth to rise above it, nature is what makes us human.

As Dr. Wilson and others see it, the attraction toward nature is the outcome of hundreds of thousands of years of natural selection. Those who were drawn toward beneficial environments, while shunning the many hazards of nature, survived to pass their predilections along. By this theory, people find blossoming trees beautiful because they're likeliest to bear ripe fruit; they love waterfalls because clear, cascading water is likeliest to be fresh and potable -- and full of fish to eat.

"The way we design our parks is based on a savanna landscape, with its trees here and there and animals scattered about," Dr. de Waal said. "Though in parks we use statues instead of animals." And what is a gothic cathedral but the frozen music of a forest, with stone pillars and vaults for trees and stained glass for the prismatic mist that shatters sun into pieces.

Conversely, many people around the world share aversions to closed spaces, high places, rats and snakes.

Insects likewise can prompt ecumenical loathing. As Dr. May Berenbaum, an entomologist at the University of Illinois, points out, alien creatures in movies are often modeled after insects, with antennas, compound eyes and backward bending limbs. "Insect aversions are often filth-related, and that may have adaptive value," Dr. Berenbaum said. After all, many insects do have a fondness for feces and carrion, and maggots can infest human wounds.

Then there is the fear of spiders, which can afflict even those who should be immune. "I can't tell you how many entomologists I know who are afraid of spiders," Dr. Berenbaum said. "They justify by saying, well, spiders aren't insects."

Significantly, many human philias and phobias appear to be shared by other primates. When they come upon a waterfall, for example, chimpanzees in the Gombe forest of Africa have been observed to settle down for a long meditation, clearly evincing what Charles Darwin called "a sense of wonder" at the view, and in a rainstorm, chimpanzees often will get up and dance. When a group of captive baboons encountered some kittens, Dr. de Waal said, the ordinarily ferocious primates "picked them up, held them, carried them around and adopted them as pets."

Experimenters have demonstrated that some monkeys reared in captivity do not automatically fear snakes, but if shown a video of a monkey reacting with alarm to a snake, they immediately become serpent-averse. Yet when shown a video of a monkey reacting negatively toward a wriggling flower, the audience monkeys do not develop a fear of flowers. Chimpanzees are every bit as disgusted by parasitic bugs as people are, and will ostentatiously squash them with fingers, leaves or teeth.

The evidence suggests, then, that biophilia is a predisposition, not a hard-wired urge like those for food and sex. It is easily ignited, yet its strength and specifics vary significantly from culture to culture, person to person. "There is some imprinting on the landscape in which you are raised," Dr. de Waal said. "If you're born in Holland, you don't like mountains, if you're from Switzerland you can't stand flat countries."

The balance of philia and phobia in any individual also varies. For some, a phobia may preclude braving the woods, or even the front yard. "Extreme entomophobia can be terribly crippling," Dr. Berenbaum said. "There's no way to live an insect-free life."

For stouter souls, including the best field biologists, deep nature is so transcendent that they spend days upon years in the forest, indifferent to heat, mosquitoes, leeches, mud, tapeworms, and all the while feeling lucky to be paid to play outdoors.

Experienced fieldworkers admit that their tastes are unusual. For every 10 students who come to a research site, they say, with visions of Jane Goodall rain-dancing in their heads, nine are soon mewing that they want to go home.

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Graphic

Photos: A New York City nature walk. (Vincent Laforet)(pg. F1); The area that is home to landscaped Brookside Gardens in Wheaton, Md., used to be wetlands. (Marty Katz for The New York Times)(pg. F6)

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